CRF Errors Corrected by the STIC System Branch

Serial Number: 10/041,007   ENTERED

CRF Processing Date: 4/30/2002 #5
Edited by: _____
Verified by: ___Av___ (STIC staff)

☐ Changed a file from non-ASCII to ASCII

☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.

☐ Edited a format error in the Current Application Data section, specifically:
_____

☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other _____.

☐ Added the mandatory heading and subheadings for "Current Application Data".

☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.

☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically:
_____

☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:
_____

☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:
_____

☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.

☐ Inserted colons after headings/subheadings. Headings edited included:
_____

☐ Deleted extra, invalid, headings used by an applicant, specifically:
_____

☑ Deleted: ☑ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as_____ .

☐ Inserted mandatory headings, specifically: _____

☐ Corrected an obvious error in the response, specifically:
_____

☐ Edited identifiers where upper case is used but lower case is required, or vice versa.

☐ Corrected an error in the Number of Sequences field, specifically:
_____

☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.

☐ Deleted *ending* stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____

☐ Other:
_____
_____
_____
_____

*Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

3/1/95

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         RAW SEQUENCE LISTING                    DATE: 04/30/2002
         PATENT APPLICATION: US/10/041,007       TIME: 18:23:57

             Input Set : N:\Crf3\04252002\J041007.raw
             Output Set: N:\CRF3\04302002\J041007.raw
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P.6

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 1 <110> APPLICANT: Matsuda, Seiichi P.T.
 2        Schepmann, Hala G
 3 <120> TITLE OF INVENTION: Ginkgo Biloba Levopimaradiene Synthase
 4 <130> FILE REFERENCE: P02081US1
 5 <140> CURRENT APPLICATION NUMBER: US/10/041,007
 6 <141> CURRENT FILING DATE: 2002-01-07
 7 <150> PRIOR APPLICATION NUMBER: US 60/259,881
 8 <151> PRIOR FILING DATE: 2001-01-05
 9 <160> NUMBER OF SEQ ID NOS: 41
10 <170> SOFTWARE: PatentIn version 3.1
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13 <211> LENGTH: 2705
14 <212> TYPE: DNA
15 <213> ORGANISM: ginkgo biloba
16 <400> SEQUENCE: 1
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19        gagatcctca tttggattta atgcacagca ctgcgtccgt tctcacttaa ggctgagatg   180
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21        ggaacgcttt gtgtcgagac ttaatgcgga ttatcatcca gctgtctgga aggacgattt   300
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24        cgacggtgaa acgaatccat ctgcatatga tacagcttgg gtggcaagaa ttccgtcaat   480
25        tgacggctct ggtgcacccc aatttcccca aacgcttcaa tggattctga caatcaact   540
26        gccagatggc tcgtggggtg aggagtgcat ttttctggcg tatgacagag ttttaaacac   600
27        tctcgcctgc ctcctcactc tcaaaatatg gaataagggc gacattcaag tgcagaaagg   660
28        ggttgagttt gtgagaaaac acatggaaga aatgaaggac gaagctgaca atcacaggcc   720
29        aagtggattc gaggtcgtgt ttcctgcaat gttagatgaa gcaaaaagct ggggattgga   780
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39        cgagaaagga gacttctttt gctttgccgg tcaaacgcaa attggtgtga ccgataatct  1380
40        taaccttttat agatgttcac aagtatgttt tccgggagaa aagataatgg aagaagctaa  1440
41        gaccttcact acaaatcatc tccaaaatgc tcttgccaaa acaacgcat ttgataagtg  1500
42        ggctgtcaag aaggatcttc ctggagaggt ggagtatgct ataaagtatc cgtggcatag  1560
43        aagtatgcca agattggagg caagaagtta catagagcaa tttggatcaa atgatgtctg  1620
44        gctggggaag actgtgtata agatgctata tgtgagcaac gaaaaatatt tggagctggc  1680
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47      gtatttctca gtggcggtta gtatgtttga gccagaattc gctgcttgta gaattgccta      1860
48      tgccaagact tcttgcctcg cagttattct agacgatctt tacgacaccc acggatctct      1920
49      ggatgatctt aaattgttct ctgaagcggt ccgaagatgg gatatctctg tgctggatag      1980
50      cgttcgggat aatcagttga aagtttgctt cctagggctg tacaacacag tgaatggatt      2040
51      tggaaaagat ggactcaagg aacaaggccg tgatgtgctg ggctatcttc gaaaagtatg      2100
52      ggagggcttg ctcgcatcgt ataccaaaga agccgaatgg tcggcagcaa agtatgtgcc      2160
53      gacattcaac gaatatgtgg aaaatgccaa agtgtccata gcacttgcga cagtcgtact      2220
54      aaactcaatc tttttcactg gagaattact tcctgattac attttacagc aagtagacct      2280
55      tcggtccaaa tttctgcatc ttgtgtcttt gactggacga ctaatcaatg acaccaagac      2340
56      ttaccaggcc gagagaaacc gtggtgaatt ggtttccagc gtacagtgct acatgaggga      2400
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58      actgaaggaa ttgaattggg agttggccaa cccagcgagc aatgccccat tgtgtgtgag      2520
59      aagactgctg ttcaacactg caagagtgat gcagctgttt tatatgtaca gagatggctt      2580
60      tggtatctct gacaaagaga tgaaagacca tgtcagccga actctttcg atcctgtggc       2640
61      gtagcatact gatattatat ataatattca tattcaatcc aaaaaaaaa aaaaaaaaa         2700
62      aaaaa                                                                   2705
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64 <210> SEQ ID NO: 2
65 <211> LENGTH: 873
66 <212> TYPE: PRT
67 <213> ORGANISM: Ginkgo biloba
68 <400> SEQUENCE: 2

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71      Pro Lys Val Pro Phe Arg Gln Ser Thr Asn Ile Leu Ile Pro Phe His
72                      20                  25                  30
73      Lys Arg Ser Ser Phe Gly Phe Asn Ala Gln His Cys Val Arg Ser His
74                  35                  40                  45
75      Leu Arg Leu Arg Trp Asn Cys Val Gly Ile His Ala Ser Ala Ala Glu
76              50                  55                  60
77      Thr Arg Pro Asp Gln Leu Pro Gln Glu Glu Arg Phe Val Ser Arg Leu
78      65                  70                  75                  80
79      Asn Ala Asp Tyr His Pro Ala Val Trp Lys Asp Asp Phe Ile Asp Ser
80                          85                  90                  95
81      Leu Thr Ser Pro Asn Ser His Ala Thr Ser Lys Ser Ser Val Asp Glu
82                      100                 105                 110
83      Thr Ile Asn Lys Arg Ile Gln Thr Leu Val Lys Glu Ile Gln Cys Met
84                  115                 120                 125
85      Phe Gln Ser Met Gly Asp Gly Glu Thr Asn Pro Ser Ala Tyr Asp Thr
86              130                 135                 140
87      Ala Trp Val Ala Arg Ile Pro Ser Ile Asp Gly Ser Gly Ala Pro Gln
88      145                 150                 155                 160
89      Phe Pro Gln Thr Leu Gln Trp Ile Leu Asn Asn Gln Leu Pro Asp Gly
90                          165                 170                 175
91      Ser Trp Gly Glu Glu Cys Ile Phe Leu Ala Tyr Asp Arg Val Leu Asn
92                      180                 185                 190
93      Thr Leu Ala Cys Leu Leu Thr Leu Lys Ile Trp Asn Lys Gly Asp Ile
94                  195                 200                 205
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95      Gln Val Gln Lys Gly Val Glu Phe Val Arg Lys His Met Glu Glu Met
96          210             215             220
97      Lys Asp Glu Ala Asp Asn His Arg Pro Ser Gly Phe Glu Val Val Phe
98      225             230             235             240
99      Pro Ala Met Leu Asp Glu Ala Lys Ser Leu Gly Leu Asp Leu Pro Tyr
100             245             250             255
101     His Leu Pro Phe Ile Ser Gln Ile His Gln Lys Arg Gln Lys Lys Leu
102             260             265             270
103     Gln Lys Ile Pro Leu Asn Val Leu His Asn His Gln Thr Ala Leu Leu
104             275             280             285
105     Tyr Ser Leu Glu Gly Leu Gln Asp Val Val Asp Trp Gln Glu Ile Thr
106         290             295             300
107     Asn Leu Gln Ser Arg Asp Gly Ser Phe Leu Ser Ser Pro Ala Ser Thr
108     305             310             315             320
109     Ala Cys Val Phe Met His Thr Gln Asn Lys Arg Cys Leu His Phe Leu
110             325             330             335
111     Asn Phe Val Leu Ser Lys Phe Gly Asp Tyr Val Pro Cys His Tyr Pro
112             340             345             350
113     Leu Asp Leu Phe Glu Arg Leu Trp Ala Val Asp Thr Val Glu Arg Leu
114             355             360             365
115     Gly Ile Asp Arg Tyr Phe Lys Lys Glu Ile Lys Glu Ser Leu Asp Tyr
116         370             375             380
117     Val Tyr Arg Tyr Trp Asp Ala Glu Arg Gly Val Gly Trp Ala Arg Cys
118     385             390             395             400
119     Asn Pro Ile Pro Asp Val Asp Asp Thr Ala Met Gly Leu Arg Ile Leu
120             405             410             415
121     Arg Leu His Gly Tyr Asn Val Ser Ser Asp Val Leu Glu Asn Phe Arg
122             420             425             430
123     Asp Glu Lys Gly Asp Phe Phe Cys Phe Ala Gly Gln Thr Gln Ile Gly
124         435             440             445
125     Val Thr Asp Asn Leu Asn Leu Tyr Arg Cys Ser Gln Val Cys Phe Pro
126         450             455             460
127     Gly Glu Lys Ile Met Glu Glu Ala Lys Thr Phe Thr Thr Asn His Leu
128     465             470             475             480
129     Gln Asn Ala Leu Ala Lys Asn Asn Ala Phe Asp Lys Trp Ala Val Lys
130             485             490             495
131     Lys Asp Leu Pro Gly Glu Val Glu Tyr Ala Ile Lys Tyr Pro Trp His
132             500             505             510
133     Arg Ser Met Pro Arg Leu Glu Ala Arg Ser Tyr Ile Glu Gln Phe Gly
134         515             520             525
135     Ser Asn Asp Val Trp Leu Gly Lys Thr Val Tyr Lys Met Leu Tyr Val
136         530             535             540
137     Ser Asn Glu Lys Tyr Leu Glu Leu Ala Lys Leu Asp Phe Asn Met Val
138     545             550             555             560
139     Gln Ala Leu His Gln Lys Glu Thr Gln His Ile Val Ser Trp Trp Arg
140             565             570             575
141     Glu Ser Gly Phe Asn Asp Leu Thr Phe Thr Arg Gln Arg Pro Val Glu
142             580             585             590
143     Met Tyr Phe Ser Val Ala Val Ser Met Phe Glu Pro Glu Phe Ala Ala
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RAW SEQUENCE LISTING   DATE: 04/30/2002
PATENT APPLICATION: US/10/041,007   TIME: 18:23:57

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Output Set: N:\CRF3\04302002\J041007.raw

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144            595                 600                 605
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146            610                 615                 620
147     Asp Leu Tyr Asp Thr His Gly Ser Leu Asp Asp Leu Lys Leu Phe Ser
148     625                 630                 635                 640
149     Glu Ala Val Arg Arg Trp Asp Ile Ser Val Leu Asp Ser Val Arg Asp
150                        645                 650                 655
151     Asn Gln Leu Lys Val Cys Phe Leu Gly Leu Tyr Asn Thr Val Asn Gly
152                        660                 665                 670
153     Phe Gly Lys Asp Gly Leu Lys Glu Gln Gly Arg Asp Val Leu Gly Tyr
154                        675                 680                 685
155     Leu Arg Lys Val Trp Glu Gly Leu Leu Ala Ser Tyr Thr Lys Glu Ala
156            690                 695                 700
157     Glu Trp Ser Ala Ala Lys Tyr Val Pro Thr Phe Asn Glu Tyr Val Glu
158     705                 710                 715                 720
159     Asn Ala Lys Val Ser Ile Ala Leu Ala Thr Val Val Leu Asn Ser Ile
160                        725                 730                 735
161     Phe Phe Thr Gly Glu Leu Leu Pro Asp Tyr Ile Leu Gln Gln Val Asp
162                        740                 745                 750
163     Leu Arg Ser Lys Phe Leu His Leu Val Ser Leu Thr Gly Arg Leu Ile
164            755                 760                 765
165     Asn Asp Thr Lys Thr Tyr Gln Ala Glu Arg Asn Arg Gly Glu Leu Val
166     770                 775                 780
167     Ser Ser Val Gln Cys Tyr Met Arg Glu Asn Pro Glu Cys Thr Glu Glu
168     785                 790                 795                 800
169     Glu Ala Leu Ser His Val Tyr Gly Ile Ile Asp Asn Ala Leu Lys Glu
170                        805                 810                 815
171     Leu Asn Trp Glu Leu Ala Asn Pro Ala Ser Asn Ala Pro Leu Cys Val
172            820                 825                 830
173     Arg Arg Leu Leu Phe Asn Thr Ala Arg Val Met Gln Leu Phe Tyr Met
174            835                 840                 845
175     Tyr Arg Asp Gly Phe Gly Ile Ser Asp Lys Glu Met Lys Asp His Val
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177     Ser Arg Thr Leu Phe Asp Pro Val Ala
178     865                 870
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180 <210> SEQ ID NO: 3
181 <211> LENGTH: 2861
182 <212> TYPE: DNA
183 <213> ORGANISM: Abies grandis
184 <400> SEQUENCE: 3

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187     gcaaacggag aagcttgtac ctacgatggg gtaaaggttc aaacaagatc attgcctgtg   180
188     ttggagaagg tggtgcaacc tctgttcctt atcagtctgc tgaaaagaat gattcgcttt   240
189     cttcttctac attggtgaaa cgagaatttc ctccaggatt ttggaggat gatcttatcg   300
190     attctctaac gtcatctcac aaggttgcag catcagacga gaagcgtatc gagacattaa   360
191     tatccgagat taagaatatg tttagatgta tgggctatgg cgaaacgaat ccctctgcat   420
192     atgacactgc ttgggtagca aggattccag cagttgatgg ctctgacaac cctcactttc   480
193     ctgagacggt tgaatggatt cttcaaaatc agttgaaaga tgggtcttgg ggtgaaggat   540
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RAW SEQUENCE LISTING   DATE: 04/30/2002
PATENT APPLICATION: US/10/041,007   TIME: 18:23:57

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Output Set: N:\CRF3\04302002\J041007.raw

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196        gaaagatgga agatgaagct gatagtcata ggccaagtgg atttgaaata gtatttcctg       720
197        caatgctaaa ggaagctaaa atcttaggct tggatctgcc ttacgatttg ccattcctga       780
198        aacaaatcat cgaaaagcgg gaggctaagc ttaaaaggat tcccactgat gttctctatg       840
199        cccttccaac aacgttattg tattctttgg aaggtttaca agaaatagta gactggcaga       900
200        aaataatgaa acttcaatcc aaggatggat catttctcag ctctccggca tctacagcgg       960
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202        aattcggaaa ccatgtgcct tgtcactatc cgcttgatct atttgaacgt ttgtgggcgg      1080
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204        tggattatgt ttacagccat tgggacgaaa gaggcattgg atgggcgaga gagaatcctg      1200
205        ttcctgatat tgatgataca gccatgggcc ttcgaatctt gagattacat ggatacaatg      1260
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207        gtcaaacaca gagaggagtt acagacatgt taaacgtcaa tcgttgttca catgtttcat      1380
208        ttccgggaga aacgatcatg gaagaagcaa aactctgtac cgaaaggtat ctgaggaatg      1440
209        ctctggaaaa tgtggatgcc tttgacaaat gggcttttaa aaagaatatt cggggagagg      1500
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212        acatttcgaa tgaaaagtat ttagaactag cgaaactgga cttcaataag gtgcagtcta      1680
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217        tcaaaagatg ggatctatca ctagtggacc aaatgccaca acaaatgaaa atatgtttttg      1980
218        tgggtttcta caatactttt aatgatatag caaaagaagg acgtgagagg caagggcgcg      2040
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221        tgtcaatagc attgggaaca gtcgttctca ttagtgctct tttcactggg gaggttctta      2220
222        cagatgaagt actctccaaa attgatcgcg aatctagatt tcttcaactc atgggcttaa      2280
223        cagggcgttt ggtgaatgac accaaaactt atcaggcaga gagaggtcaa ggtgaggtgg      2340
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230        tctttgtttg tttgtttgtt tactgccaac caaaaagcgt tcctaaacct ttgaagacat      2760
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235 <211> LENGTH: 868
236 <212> TYPE: PRT
237 <213> ORGANISM: Abies grandis
238 <400> SEQUENCE: 4
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241        His His Leu Thr Ala Asn Ala Gln Ser Ile Pro His Phe Ser Thr Thr
242                        20                  25                  30
243        Leu Asn Ala Gly Ser Ser Ala Ser Lys Arg Arg Ser Leu Tyr Leu Arg
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RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 04/30/2002
PATENT APPLICATION: US/10/041,007   TIME: 18:23:58

Input Set : N:\Crf3\04252002\J041007.raw
Output Set: N:\CRF3\04302002\J041007.raw

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:29; N Pos. 3,12,15
Seq#:30; N Pos. 9,15